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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,477	08/07/2001	Chih-Ming Ho	510015-235	1523

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EXAMINER

SOOHOO, TONY GLEN

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,477

Applicant(s)

HO ET AL.

Examiner

Tony G Soohoo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 3,4 and 14-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-13 and 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Election/Restrictions

1. Applicant's election with traverse of the species chosen in Paper No. 5 is acknowledged. The traversal is on the ground(s) that there is not a burden. This is not found persuasive because applicant has not made a statement upon the record that the species are distinct from one another and are obvious variants over one another.

The requirement is still deemed proper and is therefore made FINAL.

Claims 3, 13-17, and 21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 5. Also, claims 3 and 4 are withdrawn as being directed to a the nonelected mechanical pressure field displacement whereby claim 3 uses a hydraulic pressure field caused by a walls of a structural well, and claim 4 uses a hydraulic pressure field caused by an obstruction obstacle. Claim 13 is withdrawn as directed to a varying field not produced by an electrical field whereby it is produced by hydraulic pressure. With regards to the requirement of the species of a device with an open or closed channel, upon review, *the requirement of the species being an open/closed channel is withdrawn*, it is noted that claim 20 is directed to the open channel elected by applicant and that claim 21 is directed to a closed channel.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 5-7, 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Batchelder 4390403.

Batchelder teaches a mixing device 56, 86 having a means (electrodes 12, 14, 16, 18, 32, 42,) which is capable for crating a time varying electrical field (changes from positive voltage, to zero, to negative voltage) for inducing the movement fluids which should 1st and 2nd chemical materials be introduced together, via dielectrophoretic forces causes mixing such that an interface between the two materials are caused to interact at a rate than mere interface diffusion alone, column 8, lines 51-64, see especially claims 1, 2, 16, 17, 20. Note that the force field would cross transverse to the body of the fluid along the axis of the channel, see positive and negative charges are disposed transverse to the body such that the magnetic field formed would be transverse to the body of material.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

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said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8-12, 18-19 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Batchelder 4390403.

With regards to claims 8-12, and 18-19, these claims point out the manner of the production of the electrical field force angle in a frequency application relative to the material, whereas the claims are apparatus claims, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987). Whereas that the Batchelder reference shows a channel 6, and electrodes 12, 14, 16, 18, 32, 42 with a control feature which are capable of providing a transverse perturbed field which the apparatus may then perform mixing, it is deemed that the device as taught by the Batchelder reference as anticipating the claimed limitations of claims 8-12, 18 and 19.

However, in argument, it may be argued that the reference does not particular state a transverse force produced by the electrodes relative to the fluids and the particular alternating of voltage at frequency of the field.

Note that voltage is perturbed to provide changes to the material as seen in column 4, lines 10-55, column 5, lines 47-57, and especially column 8, lines 60-64, but does not state the orientation of the field being transverse nor the fluctuations of the voltages at a frequency as stated by the claims.

Batchelder discloses the claimed invention except for the orientation of the field and the frequency of the voltage which is perturbed to provide changes to

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the material, see column 8, lines 60-64. Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, In re Aller, 105 USPQ 233, it is deemed that it would have been obvious to one of ordinary skill in the art to modify the perturbation of the voltage (i.e. frequency) between the electrodes to at an effective transverse force.

With regards to the force angle Batchelder discloses the claimed invention except for the force angle of the field produced. since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art, In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), it would have been obvious to one having ordinary skill in the art at the time the invention was made modify the electrode or field strength to produce a force angle to produce a more effective movement of the fluids for processing.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Betchelder 4390403 in view of Nordman 6176991.

With regards to claims 20, the Batchelder reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of chamber being an open chamber. It appears that the chamber shown appears to be a tube 24, (closed).

The reference to Nordman teaches that it was known in the state of the art at a channel utilizing electrophoresis may be configured as an closed channel via a top 23, or an open channel, see column 4, lines 7-9.

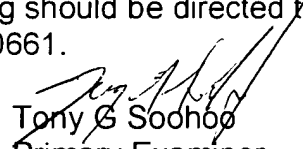
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In view of common knowledge of the state of the art as shown by the example to Nordman that one may use electrophoresis channels configured as an closed channels or open channels, it is deemed that it would have been obvious to one of ordinary skill in the art to modify the structure of Bachelder with an open top channel as shown by Nordman so that the construction of the device may be made more easily.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following disclose devices which produce fields upon a fluid: Ghowski 5092972, Chiang et al 6120665, Van Den Berg 6508273, Oh 5904824, Ramsey et al 5858187, Schram 4879011, Dissing et al 6561968, Haller et al 6010316, Pethig et al 6197176, Kopf-Sill et al 6524790, Kindlmann 4911817, Soane et al 5126022, and Haswell et al 6333120, and Chow et al 5965001.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G Soohoo whose telephone number is (703) 308-2882. The examiner can normally be reached on 7:00 AM - 5:00 PM, Tues. - Fri.. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Tony G Soohoo
Primary Examiner
Art Unit 1723

tgs